BERRYS

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APPENDIX 9:

ODOUR MANAGEMENT PLAN

(UPDATED)

IN RELATION TO

ENVIRONMENTAL PERMIT

BESPOKE APPLICATION

ON BEHALF OF

INTERNATIONAL ENERGY CROPS LTD

RTPI mediation of space · making of place

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Contents

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1.0 Introduction

This Odour Management Plan (OMP) details the methods by which the site operator will systematically assess, reduce and prevent potentially odorous emissions from the existing and additional poultry facility in accordance with the Environmental Permitting Regulations.

1.1 Odour Regulation

Guidance issued by the Environment Agency titled H4 Odour Management: How to comply with your environmental permit (hereafter referred to as 'H4 guidance') describes how the IPPC Directive includes odour in the definition of pollution and requires that '...all the appropriate preventive measures are taken against pollution …' This Directive has been transposed in the UK by the Environmental Permitting Regulations (EPR) and sites encompassed within these Regulations will have the following odour condition included within their permit:

The *Odour* section of the Environment Agency' guidance, *How to Comply with Your Environmental Permit for Intensive Farming,* states that;

"Emissions from the activities shall be free from odour at levels likely to cause pollution outside the site, as perceived by an authorised officer of the Agency, unless the operator has used appropriate measures, including, but not limited to, those specified in any approved odour management plan, to prevent or where that is not practicable to minimise the odour."

International Energy Crops Ltd must therefore employ the appropriate measures necessary to prevent odour pollution or minimise it when prevention is not practicable. The measures that are appropriate will depend on the industry sector and the site-specific circumstances taking costs and benefits into account.

1.2 OMP Objectives

OMP's are developed and employed with three pollution prevention objectives:

- to identify and employ 'all appropriate measures' to minimise the generation and emissions of odorous substances and subsequent exposure / impact;
- to prevent exposure of people outside the site to levels of odour which would result in annoyance (unacceptable pollution); and
- to minimise the risk of unplanned odour release incidents or accidents which have the potential to result in offsite odour annoyance.

This OMP serves to aid the decision-making process on the choice of controls, general site design, and operational practice in line with current industry best practice. The OMP is a working document with the specific aims of ensuring:

- odour impact is considered as part of routine operations;
- the minimisation of the risk of unplanned odour releasing incidents or accidents that could result in offsite annoyance;
- odour is primarily controlled at source by good operational practices, the correct use and maintenance of plant, and operator training; and
- 'all appropriate measures' are taken to prevent or, where that is not reasonably practicable, to minimise odorous emissions to air from the installation.

1.3 Site Setting

The poultry site lies centrally in relation to the agricultural land farmed by the applicant. The proposed additional buildings will be immediately to the east of the existing poultry sheds. TThe poultry site lies to the east of Hollins Lane which adjoins the A529 highway running between Market Drayton and Hinstock in the county of Shropshire.

There are no properties within the immediate vicinity, however there are residences and commercial properties in the surrounding area. It is generally accepted that a 400-metre zone around intensive livestock development is the threshold for nuisance complaints relating to airborne emissions. There are no residential or commercial properties with 400 metres, however the approximate distances of the closest properties are set out below (based on site area not emissions points which may be further away). There are also no public roads within 400 metres but the footpath to the south and the canal and canal towpath are within 400 metres where they run closest to the site.

Residential properties:

- Coach House (Upper Castle Farm) – approximately 460m to the north
- Properties on Newport Road – the closest at 600m to the south-west (Number 18)
- Woodseaves Farm – approximately 520 metres to the south
- Tyrley Wharf – approximately 610 metres to the north
- The Hollins, off Hollins Lane – approximately 720 metres north-west

Commercial premises:

- The Four Alls Public House – approximately 950 metres to the north-west

Public footpath:

- Footpath to the south (around 100 metres at its closest) canal towpath to the east (around 100 metres)

- Roads:
- A529 (Newport Road) to the west (around 690 metres at its closest)
- Tyrley Road to the north (around 560 metres at its closest)

Whilst there are no sensitive receptors within 400m of the proposed site, Odour Impact Modelling has still been carried out to support the permit and planning application. To enable the predicted odour impacts to be assessed discrete report locations were selected for comparative purposes. These represent the closest residential locations in each direction.

Odour emission rates from the existing and proposed poultry houses have been assessed and quantified based upon an emissions model that takes into account the likely internal odour concentrations and ventilation rates of the poultry houses. The odour emission rates so obtained have then been used as inputs to an atmospheric dispersion model which calculates odour exposure levels in the surround area.

The modelling predicts that at all of the residential receptors considered, the odour exposures would be below the Environment Agency's benchmark.

As part of the Odour Management Plan, in section 3 below, there are a range of mitigation measures which are currently in place and which will continue to be implemented to make sure there are no odour issues as part of the extension to the poultry site.

1.4 OMP Framework

Potential sources of odour have been identified in the Amenity Risk Assessment at Appendix 7 and in this Odour Management Plan. The Amenity Risk Assessment shows the sources of odour pollution identified as contributing to either a potentially not significant if managed properly or of minor significance.

The format of this OMP is based around the factors described in the *Poultry Industry Good Practice Checklist* (Version 2, August 2013) as being relevant to odour control on a poultry farm, whilst also drawing from *Best Available Techniques (BAT) Reference Document for the Intensive Rearing of Poultry and Pigs*.

1.5 OMP Status

This OMP is a controlled document, and forms part of the site Management System.

The specification for the periodic review and update of the OMP will be set out within the site Management System. In line with the recommendations of the H4 Odour Guidance, this takes place on an annual basis, as a minimum.

However, the OMP is intended to be a live document which serves as a reference during daily operations, and as such would be updated on a more frequent basis should the following occur:

- significant changes are made to the plant or operational practices;
- the Environment Agency requests that the OMP is updated, in their role as regulator; or
- complaints are received, which on subsequent investigation result in the identification of further control measures or remedial action, in addition to those set out within this OMP.

The OMP in this instance has been produced to reflect the existing site and the proposed additional poultry shed and covered manure building.

1.0 Key Issues: Odour from Poultry Farms

Odours are a normal part of poultry production and result from aerobic and anaerobic microbial activities within the litter and from the animals. In most cases, the offensive characteristics of odour increases with the accumulation of bird waste in the bedding material over the chicken's growth cycle and broiler litter is often highlighted to be a major source of odour associate with emission from broiler production sheds.

Operational factors that are reported to influence the emission of odours from poultry production sheds include litter moisture content, pH, temperature, bird activity, litter properties, weather conditions, ventilation rate, air speed, manure quantity and diet.

Other factors with the potential to lead to odour emission include carcass storage and disposal and housekeeping, in particular dust accumulation.

2.0 Feed & Water

Poorly digested feed ingredients can lead to wetter litter, higher litter nitrogen and therefore an increased welfare risk. For this reason protein quality and the amino acid balance must be optimal.

At Hollins Lane Poultry Site a professional nutritionist will review feed optimisation on a monthly basis (or more frequently if required).

Feed delivery systems are sealed to minimise atmospheric dust and any spillage of feed around the bin is immediately removed (refer to section 11.0 of this OMP).

The condition of feed bins checked frequently so any damage or leaks can be identified (refer to section 13.0 of this OMP).

Access to clean water is also important. Levels of total dissolved solids above 3000 ppm in the water can interfere with poultry health and production. Water must be provided in a way which prevents excess litter moisture (refer to section 4.0 of this OMP).

3.0 Litter and Manure Management

The litter is often highlighted to be the major source of odour associated with emissions from poultry sheds. Although the requirement to keep litter in a well maintained state is enshrined in law (Welfare of Livestock Regulations 1994) and in Defra Welfare Codes, there is a natural deterioration of litter quality throughout the cropping cycle. This is primarily a result of the build-up of wastes and also litter moisture content.

Poultry litter quality is affected by temperature and by ventilation, drinker type and management, feeder type and management, litter material and depth, condensation, stocking density, nutrition and bird health.

Excess moisture in the litter increases the incidence of breast blisters, skin burns, scabby areas, bruising, condemnations and downgrades. The wetter the litter, the more likely it will promote the proliferation of pathogenic bacteria and molds. Wet litter is also the primary cause of ammonia emissions. Controlling litter moisture is the most important step in avoiding ammonia problems.

However, litter that is too dry and dusty can also lead to problems such as dehydration, respiratory disease and increased condemnations. Ideally, litter moisture should be maintained between 20 to 25 percent.

Measures to ensure optimal litter moisture content at Hollins Lane Poultry Site include:

- Controls on feed and ventilation (see above) help to maintain litter quality. Additional controls include:
- Use of nipple drinking systems which minimise spillage. This will be inspected twice daily as a minimum in order to prevent wet litter.
- Insulated walls and ceilings to prevent condensation
- Concrete floors to prevent overcrowding
- Use of a health plan with specialist veterinary input used as necessary

Additional bedding material will be applied during each cycle in order to maintain litter of optimal moisture content.

Manure will be collected from the poultry buildings via a conveyor belt system, transporting the manure during the crop cycle to the proposed covered building within the poultry site yard.

4.0 Ventilation

Ventilation is important for the birds' health and will therefore affect production levels. It is applied when cooling is required, and for maintaining the composition of the indoor air at the required levels. Directive 2007/43/EC lays down minimum requirements for environmental parameters that need to be ensured, namely:

- NH3 concentration not exceeding 20 ppm;
- CO2 concentration not exceeding 3 000 ppm;
- indoor temperature, when the outside temperature measured in the shade exceeds 30 ºC, not exceeding this outside temperature by more than 3 °C; and
- indoor average humidity, measured over 48 hours, not exceeding 70 % when the outdoor temperature is below 10 °C.

In poultry houses, three factors have to be considered together, because their control is interdependent. They are the environmental temperature, ventilation rate and humidity.

- The humidity of the poultry house environment is affected by the number and size of the birds and therefore by their respiratory output and also, of course, by the relative humidity of the air being drawn into the house by the ventilation system. When the relative humidity in the house exceeds 70%, the moisture content of the litter tends to increase, leading to poorer conditions. The aim should be to maintain a relative humidity level in the house of between 50 and 70% by supplying sufficient air and added heat when necessary;
- The ventilation rate must always be maintained at a level sufficient to ensure that ammonia does not approach the threshold level. In cold weather this may necessitate increasing the heating levels within the house.
- It is important to prevent cool moist air from falling to the litter. With the correct controls and inlet design this can be achieved.

The measures taken at Hollins Lane Farm Poultry Site to ensure correct levels of ventilation include:

- Ventilation systems regularly adjusted according to the requirements of the flock;
- Ventilation system designed to efficiently remove moisture from the house; and
- Ventilation system routinely checked to ensure efficient functioning to specification.

The ventilation system for the additional sheds is in keeping with the ventilation system on the existing poultry buildings.

The ventilation management system will control the ventilation rates depending on health and welfare needs of the birds and the outside weather conditions. A computer automatically

controls the ventilation and heating so that heat is not wasted by being drawn out of the buildings.

Alarms to warn of failure of the ventilation system are mandatory when the birds' welfare depends on powered ventilation. The Welfare of Farmed Animals (England) Regulations 2000 requires an alarm that will give adequate warning of the failure of the system to function properly, and additional equipment that will provide adequate ventilation so as to protect the birds from suffering unnecessary pain or unnecessary distress.

The new sheds will be fitted with heat exchangers in order to optimise energy efficiency. Air from the new houses will drawn through the scrubbers. In the event that the total flow exceeds 120,000m3/ hr in any shed the additional air would exhaust through the ridge stacks. Air scrubbers will also be added to the eastern two existing poultry houses, with air to be drawn through these houses as described above.

Building ventilation will be reduced to a minimum during the initial cleanout phases, which will start within one day of destocking (unless there are adverse weather conditions that would increase odour impact). The ventilation will be increased if necessary once any excess litter has been removed and the cleaning / disinfecting stages are being completed (refer to section 8.0).

5.0 Building Design and Maintenance

New house designs consider compliance to pollution and environmental control legislation, energy use and improved biosecurity requirements.

Roofs and walls of poultry houses must be adequately insulated to prevent condensation. Insulation with a U value of 0.4W/m^2 C or better is necessary. Insulation greatly reduces heat transfer through a wall or roof. The heat is radiated from the ceiling into the house, increasing the heat load on the birds below. To prevent deterioration of the insulation, a vapour seal between the birds and the insulation is essential unless self-sealed insulation is used. Likewise cool water pipes and tanks should be lagged and the dwarf walls should be insulated. Ideally the concrete floor of the house should have a waterproof membrane to prevent rising damp. All of these features are in place at Hollins Lane Poultry Site and will be installed as part of the expansion of the site.

6.0 Catching / Destocking

Doors are kept closed wherever possible during destocking, and catching curtains used where possible.

At times of high ambient temperature or when high humidity poses a threat to the birds, catching, loading and transportation create particular risks of heat stress. It is important that plans are made in advance to reduce the risk. International Energy Crops Ltd will use meteorological forecasts of predicted temperatures so destocking can be undertaken during cool periods. Destocking is usually undertaken at night to assist this process.

The destocking process is designed to take the minimum time possible which is consistent with ensuring bird welfare.

7.0 Cleaning Out

To mitigate against odour during clean out the poultry buildings will have effective litter management (particularly when cleaning out the buildings at the end of the cropping cycle) and also mitigation during cleaning and removal of litter will take place, so the impacts would be reduced even further.

Particular care will be taken to ensure that all possible measures are put in place to reduce odour emissions during this stage.

The risk of odour impact during clean out is increased when breezes are blowing from the sheds towards sensitive receptors. Odour movement is also affected by temperature inversions where dispersion is inhibited. Wherever possible house clean out will be avoided in adverse climatic conditions.

There is a slightly longer window of opportunity allowed for clean-out than for some similar units and there is opportunity to delay clean-out if weather conditions would exacerbate the potential for odour issues.

Cleanout will be contained to avoid odours and buildings will be sealed during and after clean out. Building ventilation will be reduced to a minimum during cleanout and will start within one day of destocking (unless there are adverse weather conditions that would increase odour impact). Clean-out over the whole site will take place in a short a time as possible.

Additional measures include:

- Trailers parked as close as possible to the buildings doors in order to reduce the amount of dust being blown away.
- Trailers will not be overfilled to avoid spillage.
- Trailers carrying the litter will be sheeted.

The litter removal will be followed by a comprehensive cleaning process, involving dry methods (such as vaccum cleaning) and wet methods (disinfection). Maintenance is scheduled to avoid recontaminating cleaned houses by dislodged dust, etc.

The cleaning steps include:

- Full dismantle of all internal equipment, within the poultry buildings and egg packing building.
- Vacuum dust or blow down/brush on to litter as thoroughly as possible - include ventilation ducting.
- Remove all litter, manure, feathers, etc. as thoroughly as possible.
- Remove spilled litter and dust from the surroundings of houses.
- Use a detergent, soak to loosen adherent organic matter.
- Wash thoroughly using high pressure jet washer or steam cleaner.
- If Salmonella is present, add disinfectant to wash water to reduce contaminated aerosols.
- Pay particular attention to ensure that feeders, drinkers and drinker spillage cups or channels are well cleaned as residual contamination can multiply in these.

- Ensure that all sides of housing and fittings are cleaned and that splashed material is removed.
- Ensure that ventilation ducting above roof fans, cracks in floors and walls, service areas and store-rooms are included in the wash.
- Check with a powerful torch and white baby wipes or paper towels that a thorough job has been done - before the cleaning team leaves the site.
- to avoid recontamination do not wash material from the outside of the house back into the house.
- Safely remove all pooled wash water and washings inside and outside the house.

Procedures are in place to avoid re-contaminating a disinfected house by bringing in un-disinfected equipment.

Dirty water from clean out will be directed into the underground storage tank, which is an enclosed dirty water collection system. This will be monitored regularly and removed using a sealed system into a tanker before being spread on the farm land and third party land if required. The spreading of the dirty water will be done in connection to 9.0 below.

8.0 Spent Litter / Manure

The litter removed from Hollins Lane Poultry Site will not be disposed of in the immediate area. Manure will be taken away to third party land for temporary storage before being spread on the land.

At Hollins Lane Farm Poultry Site, there is no long-term storage of used litter outside the houses at any one time.

Litter spread on land is done strictly in accordance with approved Manure Management Plan

9.0 Carcasses

Fallen stock can be any bird or animal that has:

- died of natural causes or disease on the farm
- been killed on the farm for reasons other than human consumption

Farmers with fallen stock must use approved means and places for their disposal. The National Fallen Stock Company (NFSCo) can help with the disposal of fallen stock and advise on the disease prevention rules, as part of the National Fallen Stock Scheme (NFSS). This is the procedure adopted at Hollins Lane Farm Poultry Site.

Mortalities are collected daily and stored in sealed vermin proof containers until collected by a licensed agent. Refrigeration units will be used, if required by the Environment Agency. Regular collection by a licensed agent, the frequency of which will be increased during the summer months in order to minimise odour issues.

Storage containers will be kept in the cool and shade away from direct sunlight. The containers will be kept covered and locked, and with regular inspection to make sure leaks are prevented from the containers.

10.0 Housekeeping

The site operators are committed to maintaining site cleanliness. Any spillages are dealt with promptly and correctly.

- All wash water is adequately contained;
- Terminal hygiene plan is followed at all times;
- Suitable chemical products will be selected and the correct dilution rates are adhered to;
- Limit washing operations at weekends and bank holidays where possible.
- Washing operations not to take place during inappropriate weather conditions

Dirty Water is directed to a sealed underground tanks for storage. It is then spread onto land as weather conditions permit.

11.0 Dust

The poultry housing at the site is thoroughly cleaned between crops to ensure that disease is minimised and flock condition optimised. This will include removal of any dusty deposits within the buildings which have the potential to be odorous.

The buildings would be cleaned using dry and wet methods as described in section 8.0 of this OMP.

Avoidance of disturbing the flock helps to reduce the amount of dust in the poultry houses. This is achieved by minimising the personnel in the poultry houses, conducting as many tasks at one time as is reasonably practical. Loud noises and other sources of stress are deliberately not introduced to the birds to avoid short term 'panic' situation where the birds are disturbed and create unnecessary dust.

The control of dust within the housing through the management of litter moisture content as described in section 4.0 and air quality, as described in section 5.0 with be undertaken.

The quality of the feed will be regulated by the processing company, finely ground feeds won't be used as they increase dust emissions. There will be no mixing or milling of feedstock on site.

The delivery of feed to the storage bins and from the storage bins into the poultry buildings will be done through a closed system to minimise dust generation. Feed deliveries are monitored to avoid dust and spills, any spillages of feed around the bin is immediately swept up.

12.0 Monitoring

Monitoring takes one of 3 forms:

1. Proactive (operational management);
2. Proactive (impacts); and
3. Reactive (impacts).

The monitoring undertaken at Hollins Lane Poultry Site begins with ensuring the appropriate operation of the farm in relation to the potential sources of odour emissions detailed above. Monitoring in this way is proactive, for example ensuring that the litter remains at optimum moisture content (see section 4.0).

If on site operations (for example cycle stage) and ambient conditions (for example warm weather) are suitable for a high potential for emission and impact, a review of process and operational optimisation will be undertaken by the farm manager. This may inform, for example, the precise timing for destocking (see section 7.0).

An independent third party will also carry out pro-active monitoring of odours in the area around the site to help detect any off-site odours and identify the cause or causes if present. This monitoring will be based on static “sniffing” at various locations around the site using a standard format. The odour reporting form is included at section 19.0.

The site will be monitored routinely (daily initially and then weekly after the first three months operations, if odours are not detected) using sniff testing. Further sniff testing and observations will be conducted around the various operations on site to identify potential odour risks and sources. Odour monitor points are shown as in the below plan, which includes the third party dwellings to the north of the site.

Results of this assessment will be recorded in the site diary and daily monitoring sheet, which will be available for inspection in the site office. Prevailing weather conditions and processing conditions being carried out on site at the time of assessment will also be recorded.

Should elevated levels of odour be detected during the sniff testing then a full investigation will be undertaken by the site operator, with assistance from the independent third party, until the odour problem is identified. A review will then take place to eliminate the odour source. Further checks will be undertaken in the future to make sure that odour is not an issue.

International Energy Crops Ltd already have a proactive relationship with any neighbours. Neighbours will be warned if any likely short term odour episodes which might arise as a result of exceptional or infrequent maintenance events. A list of contact details for neighbours will be maintained in case there is a need to contact them in the event of an emergency with potential off-site consequences.

International Energy Crops Ltd will use meteorological forecasts and a weather station to allow conditions to be logged and highlight whether the wind was in the direction of the receptor when and if a complaint was logged. The weather conditions will be recorded whenever monitoring is being carried out. In this way the potential for complaints may be verified and the potential for other sources discounted.

Monitoring of operations at close receptor points will be undertaken routinely to check that odour is not an issue for neighbouring properties.

In the event of a complaint, ambient odour surveys will be undertaken in accordance with IAQM methods.

13.0 Contingencies and Accidents

The potential for accidents and unforeseen events can be minimised through optimal design and good operational practice. A full updated Accident Management Plan can be seen at Appendix 3. Notwithstanding this, contingency plans are in place at Hollins Lane Farm Poultry Site to prevent odour. This section considers the emergency scenarios, measures taken to minimise their occurrence and short-term measures to minimise impacts with the major issues detailed below and all measures detailed within the Contingency Plan at 16.0 and the Summary Table: Odour Minimisation by Source included at 17.0 and the Summary Table: Odour Minimisation by Activity included at 18.0.

14.1 Farm Fires

DEFRA guidance Farm Fires – Protecting farm animal welfare states:

All farms are at risk of fire and each year there are over one thousand fires in agricultural buildings, many of them housing livestock. Most fires on farms can be prevented provided farmers and stockpersons are sufficiently aware of potential fire hazards and alert enough to recognise and remedy any hazards which do occur.

The guidance examines the fire dangers which are commonly found on farms and identifies simple ways in which risks can be reduced by taking sensible measures.

Clearly under such circumstances (i.e. whilst the fire is occurring) the issue of odour nuisance is secondary to human and animal welfare. With regard to the management of odour impact, the key principals are prompt responses that contain eh fire and attempt to distinguish it, minimise damage to containment and extract infrastructure.

Once the fire has been extinguished, measures will be taken to dispose of any livestock killed in the fire in accordance with the methods described in section 10.0 of this OMP.

14.2 Failure of Utilities

The site has an on-site biomass system facility with back-up systems. This ensures a constant electricity supply and also provides heat for the birds (where) required. The site also has a secure (and independent) supply of water for cleaning the houses and hydrating the birds.

14.3 Staffing

The management of the poultry site will be over seen by International Energy Crops Ltd. All staff working on the site will be suitably trained and experience in working on a poultry site.

A plan will be put in place to make sure adequate provisions are there in the event of staff illness of holidays etc.

14.4 Major Spillages / Leaks

Details of emergency procedures to be initiated in case of a failure of containment and major spillage/ leaks are details in the Accident Management Plan.

14.0 Complaint Handling

In the event of an odour complaint an Odour Complaint Form (section 18.0 of this OMP) will be filled in and appropriate action will be taken to remedy the problem should the complaint be validated.

As described in Section 13.0, this complaint will be verified through ambient odour survey and review of site activities. Auditable records of any investigations carried out will be kept, with incidents analysed to stop them happening again. The site manager will have ultimate responsibility for investigating complaints and resolving any site issues.

17.0 Summary Table: Odour Minimisation by Source

Potential Source	Minimisation Technique	Review Date
Chicken Housing	• Litter to be kept as dry as possible. Litter removed via a manure belt system. • Ventilation appropriate for bird welfare and to prevent a build-up in humidity. • Leak proof drinking system, this will be inspected twice daily as a minimum in order to prevent wet litter. • Additional bedding material will be applied during each cycle in order to maintain dry litter. • Early disease detection as sick birds can cause poor or wet litter conditions. • The bird's water consumption will be monitored daily along with humidity within the building. • Correct temperature will be maintained dependent on the requirements of the birds. • Adequate building insulation will be installed during construction. • The buildings integrity will be maintained in order to prevent water ingress. • Routine end of cycle maintenance. • Maintain site cleanliness, any spillages will be dealt with promptly and correctly. • Site clean and foul water drainage systems will be properly maintained and kept clean in order to reduce odour.	Annually-June
Carcases	• Mortalities will be collected daily and stored in sealed vermin proof containers until collected by a licensed agent. • Regular collection by a licensed agent, the frequency of which will be increased during the summer months in order to minimise odour issues. • Containers stored in a cool, safe place, out of direct sunlight.	Annually – June
Litter Removal	• The manure during the crop cycle will be collected on a temporary basis within the covered muck store via a conveyor belt system, before it is loaded into trailers and taken off the site. • The poultry shed doors are closed during initial clear out and only opened when trailers are being loaded. • Trailers parked as close as possible to the buildings doors in order to reduce the amount of dust being blown away.	Annually – June

	• Trailers will not be overfilled to avoid spillage. • Trailers carrying the litter will be sheeted. • Litter removal not to take place during inappropriate weather conditions	
Washing Operations	• All wash water will be adequately contained. • Terminal hygiene plan to be followed at all times. • Suitable chemical products will be selected and the correct dilution rates will be adhered to. • Limit washing operations at weekends and bank holidays where possible. • Washing operations not to take place during inappropriate weather conditions	Annually - June

18.0 Summary Table: Odour Minimisation by Activity

Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks
Manufacture and selection of feed	• Milling and mixing of compound feeds • The use of poor quality and odorous ingredients • Feeds which are unbalanced in nutrients leading to increased excretion, litter moisture and emissions of ammonia and other odorous compounds to air	• No on site milling • Feed specifications prepared by feed compounders nutrition specialist • Feed supplied from UKASTA accredited feed mills so approved raw material used
Feed storage and delivery	• Spillage of feed during delivery and storage • Creation of dust during feed delivery	• Feed delivery systems sealed to minimise atmospheric dust • Feed deliveries are monitored to avoid dust or spills. • Any spillage of feed around the bin is immediately swept up • The condition of feed bins checked frequently so any damage or leaks can be identified. Feed bins are checked on a daily basis and a full check of all pipework and equipment is undertaken at the end of each crop cycle. • If damage is noted than the use of that feed bin is stopped being used immediately, as detailed in section 16.0 above and the Accident Management Plan. Provisions will be made to arrange for feed to be provided within the buildings by hand.
Ventilation system	• Inadequate air movement in the house leading to high humidity, wet litter and ammonia build up • Inadequate system design causing poor dispersal of odours	• Ventilation systems regularly adjusted according to the requirements of the flock • Ventilation system designed to efficiently remove moisture from the house • Ventilation system routinely checked to ensure efficient functioning to specification. Ventilation equipment is checked on a daily basis and a full check of all pipework and equipment is undertaken at the end of each crop cycle

Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks
		• If there is a failure to the system then steps are taken as detailed in section 16.0 above and within the Accident Management Plan. • Fans are located on separate supplies and therefore individual fans can be turned off / on as and when required allowing the system to keep running if one fan breaks.
Litter management	• Odours arising from wet litter (see above) • The use of insufficient or poor quality litter • Spillage of water from drinking systems • Disease outbreaks leading to wet litter	• Controls on feed and ventilation (see above) help to maintain litter quality. Additional controls include: • Use of nipple drinking systems which minimise spillage, along with drip cups. • Insulated walls and ceilings to prevent condensation • Concrete floors to prevent overcrowding • Use of a health plan with specialist veterinary input used as necessary • The drinker heights, water lines and other equipment are routinely checked to ensure efficient functioning to specification. This is done on a daily basis and a full check of all pipework and equipment is undertaken at the end of each crop cycle • If there is a failure to the system then steps are taken as detailed in section 16.0 above and within the Accident Management Plan. • Hollins Lane Farm Poultry Site will make sure that water can be temporarily provided to the poultry buildings to maintain bird welfare.
Carcass disposal	• Inadequate storage of carcasses on site • Carcasses left on site too long	• Controls on carcasses as detailed in section 10.0 above. • Carcasses are placed in sealed containers immediately after they are removed

Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks
		• Storage container are kept in a cool place, within shade and away from direct sunlight. • The containers are kept covered and locked. Refrigeration units will be used, if required by the Environment Agency. • Containers are kept away from sensitive receptors but within an allocated place which is suitable for the site operation. • The containers are checked on a daily basis to make sure there are no leaks. • If the container is found to be leaking or in disrepair then the container then emergency repairs will be undertaken immediately to stop any leakage occurring. • The container in is designed especially for the storage of carcasses, being very easy to use and to wash out with high pressure water to avoid the propagation of diseases and infections. • The containers can be lifted up and emptied without the need to touch the containers. • The container is insulated and double layer to limit any leaks from them. • Regular collection on a weekly basis, with increased times over the summer period. • The containers are disinfected and treated once emptied with odour neutraliser, this wash water is directed to the underground storage tank.
House clean-out	• Creation of dust associated with litter removal from houses • Use of odour products to clean the houses	• Controls on house clean-out are as listed in sections 4.0, 8.0 and 11.0 above. • Cleanout will be contained to avoid odours and the buildings sealing during and after cleanout.

Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks
		• Clean out starts within one day of destocking (unless there are adverse weather conditions that would increase odour). • Building ventilation is reduced to a minimum during cleanout, and the cleanout is undertaken as quickly as possible. • All infrastructure including ventilation systems are cleaned during house cleanout, as per the method highlighted in section 8.0 above. • Excess litter not collected by the manure belts is carefully placed into trailers positioned at the entrance to each house. When full the trailer is covered/sheeted and not overfilled • Only approved and suitable products are used. Clean-out not to take place in inappropriate weather conditions. • Litter is no stored on the site, it is taken off site for temporary storage as per the farms manure management plan.
Used litter	• Storage of used litter on site • Transport of litter and applications to land	• There is no storage of used litter outside the houses at any one time. • Litter during the crop cycle is removed from the poultry buildings via a manure conveyor belt system and transported to a covered muck building where it is collected for exporting off the site. • Yards are cleaned down at clear out. • Litter is transported in covered trailers and spread on third party land. • Litter spread on land is done strictly in accordance with approved Manure Management Plan
Dirty water management	• Standing dirty water during the production cycle or at clean out • Applications of dirty water to land	• Areas around the house are concreted and remain clean during the production cycle

Odour Related Issue	Potential Risks and Problems	Actions taken to minimise odour and odour risks
		• At clean-out dirty water is directed to sealed underground tanks for storage. All drains divert into this underground drainage system. • All dirty water tank levels are monitored during wash down to prevent overfill. • If the drainage malfunctions then measures are taken as per the Accident Management Plan. The underground tanks are sucked out and the system unblocked. • The storage tanks are emptied the next day after wash down, subject to weather conditions permitting. • The dirty water system is cleaned out twice, with the system thoroughly cleaned through during washing down operations to make sure no sediment builds up. • Any deposits from the cleaning out is transfers off site as per the removal of used litter from the site. • Vehicle washing takes places at a designed wash point, with all wash waters from this area diverted to dirty water tanks. • It is then spread onto land owned by third parties as weather conditions permit and in accordance with the manure management plan.
Stock Inspections / Catching	• Creation of dust.	• The birds are inspected 3 – 4 times a day, 7 days a week. • Dust avoidance measures are set out in section 12.0 above and with the Dust Management Plan. • The catch teams are fully trained • Doors or curtains operated for entry and exit of forklifts as necessary • Lorries parked as close as possible to the sheds in order to reduce forklift travel • Screen curtains fitted to lorries as necessary

19.0 Odour Complaint Form

Hollins Lane Farm, Poultry Site		Date Recorded:	Reference No:
Name and address of caller			
Telephone			
Location of caller in relation to installation			
Time and date of complaint			
Date, time and duration of offending odour			
Callers description of odour			
Has the caller any other comments on odour?			
Weather conditions			
Wind strength and direction			
Any previous complaints relating to this odour?			
Any other relevant information?			
Potential odour sources that could give rise to the complaint			
Operating conditions at the time of the offending odour			
Follow up – date and time caller contacted			
Action taken			
Amendment requirement to Odour Management Plan			
Form completed by (print)		Signed and date	

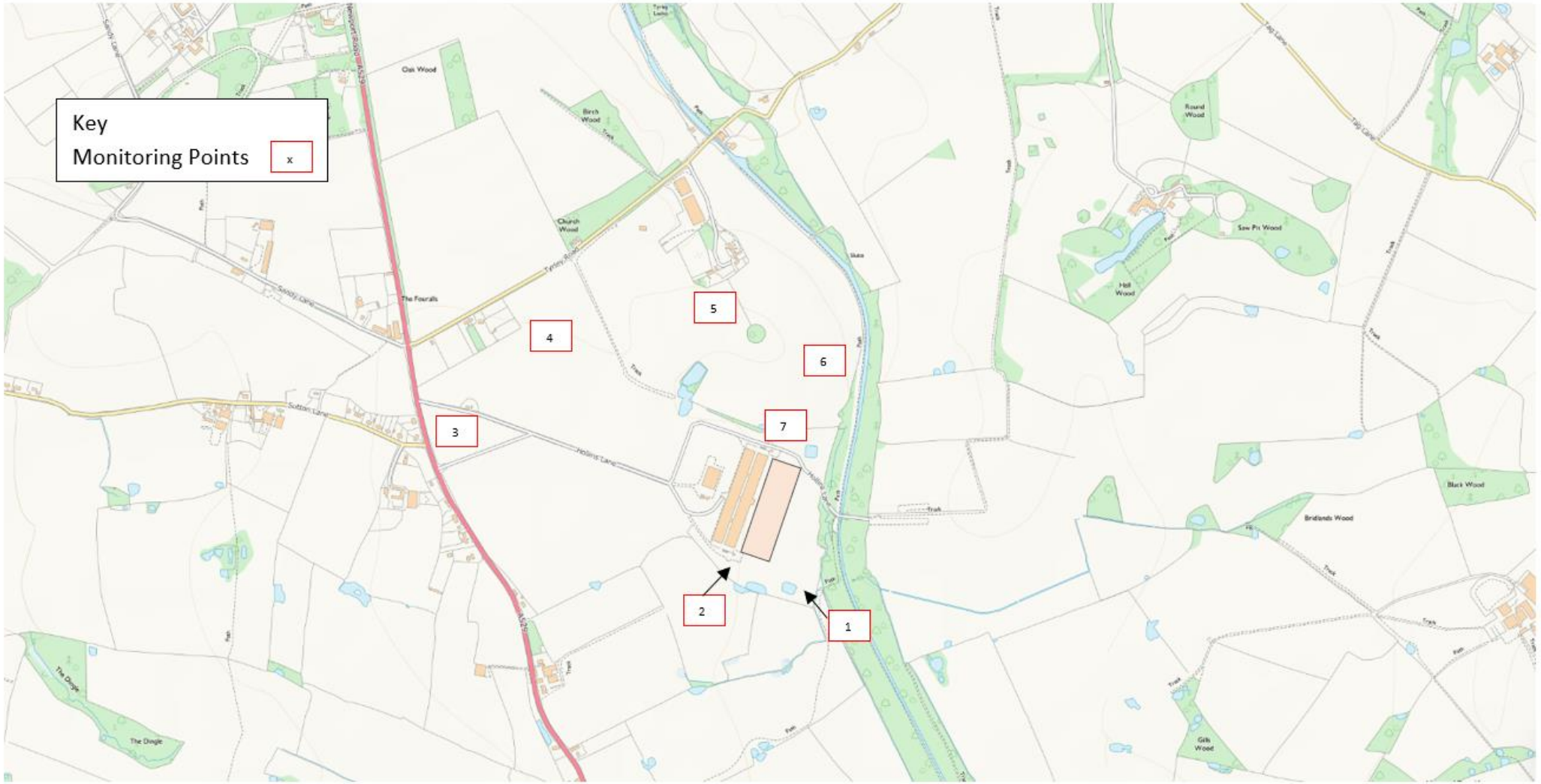
20.0 Odour Report Form

Odour Report Form for Hollins Lane Farm Poultry Site					Date :	
Time of test						
Location of test						
Weather conditions (dry, rain, fog, snow etc.)						
Temperature (very warm, warm, mild, cold or degrees if known)						
Wind strength (none, light, steady, strong, gusting or use Beaufort Scale if known)						
Wind direction (e.g. from North East)						
Intensity (see below)						
Duration (of test)						
Constant or intermittent in this period or persistence						
What does it smell like?						
Receptor sensitivity (see below)						
Is the source evident?						
Any other comments or observations						

Sketch a plan of where the test were taken, the potential source(s).

Intensity		**Receptor sensitivity**
0 No odour	4 Strong odour	Low (e.g. footpath, road)
1 Vary faint odour	5 Very strong odour	Medium (e.g. industrial or
2 Faint odour	6 Extremely strong odour	commercial workplaces)
3 Distinct odour	Ref: German Standard VDI 3882, Part 14	High (e.g. houses, pub / hotel etc)

Odour Monitoring Check Points



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